

THE OFFICE OF REGULATORY STAFF

DIRECT TESTIMONY AND EXHIBITS

OF

MICHAEL L. SEAMAN-HUYNH



DOCKET NO. 2007-3-E

**Duke Energy Carolinas, LLC
Annual Review of Base Rates for Fuel Costs**

DIRECT TESTIMONY OF
MICHAEL L. SEAMAN-HUYNH
ON BEHALF OF
THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF
DOCKET NO. 2007-3-E
IN RE: DUKE ENERGY CAROLINAS, LLC
ANNUAL REVIEW OF BASE RATES FOR FUEL COSTS

Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.

A. My name is Michael Seaman-Huynh. My business address is 1441 Main Street, Suite 300, Columbia, South Carolina 29201. I am employed by the State of South Carolina as an Electric Utilities Specialist in the Electric Department for the Office of Regulatory Staff ("ORS").

Q. PLEASE STATE YOUR EDUCATIONAL BACKGROUND AND EXPERIENCE.

A. I received a Bachelor of Arts Degree in History from the University of South Carolina in Columbia in 1997. Previous to my employment with ORS, I was employed as an energy analyst with a private consulting firm. In June 2006, I joined the Office of Regulatory Staff.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?

A. The purpose of my testimony is to set forth ORS' findings and recommendations resulting from our examination of Duke Energy Carolinas, LLC ("Duke" or "Company") fuel expenses and power plant operations used in the generation of electricity to meet the Company's South Carolina retail customer requirements.

1 **Q. WHAT AREAS WERE ENCOMPASSED IN YOUR REVIEW OF THE**
2 **COMPANY'S FUEL EXPENSES AND PLANT OPERATIONS?**

3 **A.** First, ORS reviewed the Company's responses to ORS' Audit Information
4 Requests containing one-hundred-two multi-part questions. In preparation for this
5 proceeding, ORS reviewed the Company's monthly fuel reports including power plant
6 performance data, unit outages, and generation statistics. Comparisons and analysis of
7 actual to original estimates were performed for both megawatt-hour sales and fuel costs.

8 **Q. WHAT ADDITIONAL STEPS WERE TAKEN IN ORS' REVIEW OF THE**
9 **COMPANY'S PROPOSAL IN THIS PROCEEDING?**

10 **A.** ORS met with various Duke personnel representing a variety of areas of expertise
11 to discuss and review Duke's fossil and nuclear fuel procurement, fuel transportation,
12 environmental cost procedures, nuclear, fossil and hydro generation performance, plant
13 dispatch, forecasting, resource planning, and general Company policies and procedures.
14 These meetings occurred at Duke Headquarters in Charlotte, N.C.

15 Also, on a daily basis, ORS keeps abreast of the coal industry including
16 transportation through industry publications regarding activities in the coal and related
17 markets.

18 **Q. DID ORS EXAMINE THE COMPANY'S PLANT PERFORMANCE FOR THE**
19 **REVIEW PERIOD?**

20 **A.** Yes. ORS reviewed the Company's performance of its generating facilities to
21 determine if the Company made reasonable efforts to minimize fuel costs. ORS gave
22 special attention to the nuclear plant performance. The review period includes the
23 historical period from July 2006 through June 2007, and the projected period from July

2007 through September 2008. ORS reviewed the availability of the Company's major power plants. Exhibit MSH-1 shows the monthly availability of the Company's major generating units stated in percentages. The corresponding capacity factors in Exhibit MSH-2 indicate the monthly utilization of each unit in producing power.

Q. PLEASE EXPLAIN THE SIGNIFICANCE OF PLANT AVAILABILITY AND HOW IT IS USED IN YOUR EVALUATION OF THE COMPANY'S PLANT PERFORMANCE.

A. Exhibits MSH-3 and MSH-4 show the Company's major fossil and nuclear units summary of outages for the review period, respectively. With reference to Exhibit MSH-1, in months where generation units show zero availability as well as those months showing less than 100% availability led us to examine the reasons for such occurrences. Exhibit MSH-1 through Exhibit MSH-4 can be used in concert to evaluate the Company's plant operations. As an example, Exhibit MSH-1 shows the Marshall Fossil Unit 3 had 0.00% availability in October and November 2006. Exhibit MSH-3 indicates the reason for the 0.00% availability was the scheduled maintenance outage between September 23, 2006 and December 21, 2006; therefore, the unit was not available to generate electricity during this time frame.

Q. WOULD YOU EXPLAIN HOW THE OTHER OUTAGES ARE REPRESENTED ON EXHIBITS MSH-3 AND MSH-4?

A. Yes. Exhibit MSH-3 provides explanations for major fossil unit outages of 100 hours or greater although our review includes all outages. Exhibit MSH-4 provides explanations for all nuclear plant outages during the review period.

1 **Q. PLEASE ADDRESS THE OUTAGES AT THE COMPANY'S THREE NUCLEAR**
2 **STATIONS.**

3 **A.** Exhibit MSH-4 shows the duration of the outages at the Company's three nuclear
4 stations by unit along with the explanation of the outage. ORS found that the Company
5 took appropriate corrective action with respect to these outages, and there were no
6 Nuclear Regulatory Commission fines associated with these outages. The seven nuclear
7 units combined achieved an overall 88.0% availability factor and 89.5% capacity factor
8 for the review period which includes scheduled refueling outages for five of the seven
9 units. It is worth noting that the Catawba 2 unit ran for the entire period under review
10 with no outages.

11 **Q. WHAT WERE THE RESULTS OF YOUR ANALYSIS OF THE COMPANY'S**
12 **PLANT OPERATIONS FOR THE PERIOD UNDER REVIEW?**

13 **A.** ORS' review of the Company's operation of its generating facilities concluded
14 that the Company made reasonable efforts to maximize unit availability and minimize
15 fuel costs.

16 **Q. DID ORS REVIEW THE GENERATION MIX AND BASE UNIT FUEL COSTS**
17 **UTILIZED BY THE COMPANY DURING THE REVIEW PERIOD?**

18 **A.** Yes. Exhibit MSH-5 shows the monthly generation mix for the review period by
19 generation type. The Company has no combined-cycle gas-fired generating units in its
20 fleet and uses its simple-cycle combustion turbine units sparingly during peaking periods
21 or when capacity is short and purchase opportunities are not economical. The
22 Company's load is mainly met through comparable portions of nuclear and coal
23 generation along with a small amount of hydro production.

1 In addition, Exhibit MSH-6 shows the average fuel cost in cents per kilowatt-hour
2 and generation in megawatt-hours for each of the Company's base load nuclear and coal-
3 fired facilities. The Catawba Nuclear Station had the least expensive average fuel cost at
4 0.396 cents per kilowatt-hour. Cliffside, a coal-fired plant, had the most expensive fuel
5 cost at 3.046 cents per kilowatt-hour. The highest total generation of 20,030,998
6 megawatt-hours was produced at the Oconee Nuclear Station.

7 **Q. HAS ORS REVIEWED THE ACCURACY OF THE COMPANY'S FORECAST?**

8 **A.** Yes. As shown in Exhibit MSH-7, the Company's actual megawatt-hour sales
9 versus forecasted sales varied by 3.79% during the review period. In addition, Exhibit
10 MSH-8 shows the monthly variance between projected and actual fuel cost for the review
11 period. This Exhibit demonstrates that the Company was able to improve its forecasted
12 costs during five of the twelve months of the review period. However, Duke's projection
13 varied from the actual fuel cost by only .46% for the review period.

14 **Q. DID ORS REVIEW ADDITIONAL INFORMATION IN DETERMINING THE**
15 **REASONABLENESS OF THE COMPANY'S FORECAST?**

16 **A.** Yes. ORS reviewed the forecasted maintenance schedules for the Company's
17 major generating units as well as the Company's forecasted fuel price for nuclear and
18 coal. ORS also reviewed the Company's load forecasting and dispatch procedures.
19 Based on the review, ORS finds Duke's forecast to be reasonable and appropriate.

20 **Q. DID ORS REVIEW THE CHANGES THE COMPANY PROPOSED TO**
21 **COMPLY WITH THE RECOVERY OF CERTAIN VARIABLE**
22 **ENVIRONMENTAL COSTS AS REQUIRED BY S.C. CODE ANN. SECTION 58-**
23 **27-865(A)(1) (2007 S.C. ACTS 16)?**

1 A. Yes. ORS reviewed the Company's proposal to calculate the variable
2 environmental component of costs for the Residential, General Service/Lighting, and
3 Industrial customer classes. The allocation of variable environmental costs, both incurred
4 and projected, based on firm peak demand distributes the costs to each customer class.

5 **Q. WHAT OTHER INFORMATION HAS ORS REVIEWED IN MAKING ITS**
6 **DETERMINATIONS IN THIS PROCEEDING?**

7 A. Exhibit MSH-9 shows the ending balances of over and under collections of fuel
8 costs beginning November 1979. The Company has experienced both over and under
9 recovery balances throughout the approximate twenty-eight year period.

10 **Q. WHAT OTHER SOURCES OF INFORMATION DOES ORS USE IN**
11 **DETERMINING THE REASONABLENESS OF A UTILITY'S REQUEST FOR A**
12 **FUEL COST COMPONENT?**

13 A. ORS routinely 1) reviews private and public industry publications as well as those
14 available on the Energy Information Administration's ("EIA") website; 2) conducts
15 meetings with Company personnel; 3) conducts meetings with representatives of large
16 industrial energy consumers; 4) attends industry conferences; and 5) reviews information
17 as filed monthly by electric generating utilities on Form 423 with the Federal Energy
18 Regulatory Commission. An example of EIA data reviewed is included on Exhibits
19 MSH-10 and MSH-11. Exhibit MSH-10 provides spot coal price data for a three year
20 period and includes the most recent downward trend of the average weekly coal
21 commodity spot prices for Central Appalachia beginning late in 2006. Duke generally
22 obtains its coal from the Central Appalachia region. Exhibit MSH-11 provides uranium

1 price data for the previous twelve year period and shows a steady increase in the price of
2 uranium since 2001.

3 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

4 **A.** Yes, it does.

**SOUTH CAROLINA
OFFICE OF REGULATORY STAFF**

**DUKE ENERGY CAROLINAS, LLC
ANNUAL REVIEW OF BASE RATES FOR FUEL COST
ACTUAL REVIEW PERIOD: JULY 2006 – JUNE 2007**

DOCKET NO. 2007-3-E

MICHAEL L. SEAMAN-HUYNH TESTIMONY

EXHIBIT INDEX

EXHIBIT NO.

EXHIBIT TITLE

| | |
|---------------|---|
| MSH-1 | Power Plant Performance Data Report – Availability Factors |
| MSH-2 | Power Plant Performance Data Report – Capacity Factors |
| MSH-3 | Fossil Unit Outage Report (100 Hrs. or Greater Duration) |
| MSH-4 | Nuclear Unit Outage Report |
| MSH-5 | Generation Mix Report |
| MSH-6 | Generation Statistics for Major Plants |
| MSH-7 | SC Retail Comparison of Estimated to Actual Energy Sales |
| MSH-8 | SC Retail Comparison of Estimated to Actual Fuel Cost |
| MSH-9 | History of Cumulative Recovery Account Report |
| MSH-10 | EIA Average Weekly Coal Commodity Spot Prices |
| MSH-11 | EIA Weighted-Average Price of Uranium Purchased for Nuclear Power Reactors |

All Exhibits Prepared by the SC Office of Regulatory Staff

**South Carolina
Office of Regulatory Staff
Power Plant Performance Data Report
Availability Factors (Percentage) for
Duke Energy Carolinas, LLC**

| HISTORICAL DATA | | | | | | REVIEW PERIOD (ACTUAL) DATA | | | | | | | | | | | | |
|-----------------|------|--------------|--------------|--------------|--------------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-----------------------|
| PLANT | UNIT | MW RATING | YEAR 2004 | YEAR 2005 | YEAR 2006 | JUL 2006 | AUG 2006 | SEP 2006 | OCT 2006 | NOV 2006 | DEC 2006 | JAN 2007 | FEB 2007 | MAR 2007 | APR 2007 | MAY 2007 | JUN 2007 | Average Review Pd. |
| CATAWBA | 1 | 1129 | 96.56 | 91.75 | 80.77 | 100.00 | 100.00 | 100.00 | 100.00 | 33.92 | 5.31 | 97.50 | 100.00 | 98.37 | 100.00 | 100.00 | 100.00 | 86.3 |
| CATAWBA | 2 | 1129 | 87.39 | 99.74 | 87.88 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.0 |
| MCGUIRE | 1 | 1100 | 83.40 | 90.96 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 30.00 | 0.00 | 10.43 | 100.00 | 78.4 |
| MCGUIRE | 2 | 1100 | 99.99 | 86.73 | 84.77 | 100.00 | 100.00 | 50.98 | 0.00 | 66.24 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 84.8 |
| OCONEE | 1 | 846 | 96.65 | 89.93 | 78.66 | 100.00 | 100.00 | 100.00 | 19.39 | 0.00 | 47.86 | 100.00 | 70.58 | 100.00 | 100.00 | 100.00 | 100.00 | 78.2 |
| OCONEE | 2 | 846 | 75.68 | 89.08 | 97.61 | 100.00 | 100.00 | 87.75 | 100.00 | 100.00 | 100.00 | 100.00 | 86.58 | 100.00 | 90.03 | 3.38 | 100.00 | 89.0 |
| OCONEE | 3 | 846 | 76.20 | 95.73 | 89.25 | 100.00 | 92.73 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 100.00 | 99.4 |
| NUCLEAR TOT | | 6996 | 87.98 | 91.99 | 88.42 | 100.00 | 98.96 | 91.25 | 74.20 | 71.45 | 79.02 | 99.64 | 93.88 | 89.77 | 84.29 | 73.40 | 100.00 | 88.0 |
| BELEWS CREEK | 1 | 1135 | 75.08 | 83.17 | 81.98 | 91.15 | 95.05 | 93.17 | 81.54 | 45.37 | 70.85 | 96.88 | 91.08 | 89.61 | 83.76 | 98.96 | 94.35 | 86.0 |
| BELEWS CREEK | 2 | 1135 | 83.87 | 83.65 | 84.39 | 69.04 | 99.80 | 100.00 | 77.61 | 99.99 | 99.81 | 99.91 | 99.89 | 73.73 | 64.40 | 99.56 | 97.58 | 90.1 |
| CLIFFSIDE | 5 | 562 | 89.80 | 89.36 | 92.52 | 99.97 | 99.76 | 99.60 | 98.45 | 96.91 | 98.57 | 91.62 | 75.36 | 62.53 | 99.04 | 97.94 | 68.23 | 90.7 |
| MARSHALL | 3 | 670 | 91.06 | 88.24 | 66.73 | 66.32 | 91.72 | 72.80 | 0.00 | 0.00 | 40.47 | 99.79 | 98.55 | 55.88 | 88.71 | 94.44 | 99.90 | 67.4 |
| MARSHALL | 4 | 670 | 87.28 | 94.36 | 68.46 | 99.97 | 99.88 | 92.40 | 48.22 | 59.55 | 96.86 | 88.68 | 99.83 | 99.92 | 78.48 | 99.93 | 99.81 | 88.6 |
| FOSSIL TOTALS | | 4172 | 85.42 | 87.75 | 78.82 | 85.29 | 97.24 | 91.59 | 61.16 | 60.36 | 81.31 | 95.38 | 92.94 | 76.33 | 82.88 | 98.17 | 91.97 | 84.6 |

EXHIBIT MSH-1

South Carolina
Office of Regulatory Staff
Power Plant Performance Data Report
Capacity Factors (Percentage) for
Duke Energy Carolinas, LLC

| PLANT | UNIT | MW RATING | HISTORICAL DATA | | | | REVIEW PERIOD (ACTUAL) DATA | | | | | | | | | | | | Average Review Pd |
|--------------|------|--------------|---------------------------|-----------|-----------|-----------|-----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------------------|
| | | | LIFE ¹ TIME | YEAR 2004 | YEAR 2005 | YEAR 2006 | JUL 2006 | AUG 2006 | SEP 2006 | OCT 2006 | NOV 2006 | DEC 2006 | JAN 2007 | FEB 2007 | MAR 2007 | APR 2007 | MAY 2007 | JUN 2007 | |
| CATAWBA | 1 | 1129 | 81.64 | 97.84 | 92.92 | 82.16 | 101.63 | 101.39 | 102.02 | 103.02 | 33.86 | 1.07 | 98.51 | 103.81 | 98.40 | 103.23 | 102.73 | 101.95 | 87.6 |
| CATAWBA | 2 | 1129 | 83.26 | 89.13 | 102.15 | 88.78 | 101.54 | 101.80 | 102.19 | 103.03 | 103.14 | 98.96 | 103.62 | 103.45 | 103.18 | 103.18 | 102.60 | 99.49 | 102.2 |
| MCGUIRE | 1 | 1100 | 75.76 | 85.35 | 93.15 | 103.49 | 101.60 | 101.38 | 101.45 | 103.26 | 104.34 | 104.87 | 105.15 | 104.95 | 30.53 | 0.00 | 1.73 | 96.37 | 79.6 |
| MCGUIRE | 2 | 1100 | 81.98 | 103.44 | 88.77 | 87.57 | 101.94 | 101.38 | 50.95 | 0.00 | 61.43 | 105.63 | 105.68 | 105.66 | 98.53 | 105.38 | 104.46 | 103.60 | 87.1 |
| OCONEE | 1 | 846 | 75.12 | 97.74 | 90.68 | 78.62 | 100.59 | 99.47 | 97.97 | 16.30 | 0.00 | 44.28 | 102.49 | 70.13 | 102.64 | 102.35 | 101.91 | 101.81 | 78.3 |
| OCONEE | 2 | 846 | 77.86 | 76.36 | 90.00 | 99.71 | 102.32 | 101.09 | 82.44 | 102.11 | 102.97 | 102.62 | 103.20 | 87.90 | 103.08 | 89.62 | 0.73 | 102.36 | 90.0 |
| OCONEE | 3 | 846 | 77.22 | 77.42 | 97.50 | 90.78 | 102.55 | 87.64 | 101.22 | 102.48 | 103.39 | 103.78 | 103.89 | 103.74 | 103.96 | 103.76 | 103.48 | 103.23 | 101.9 |
| NUCLEAR TOT | | 6996 | 78.98 | 90.27 | 93.72 | 90.17 | 101.73 | 99.52 | 90.97 | 76.20 | 73.13 | 79.55 | 103.21 | 98.22 | 90.27 | 85.64 | 74.76 | 101.12 | 89.5 |
| BELEWS CREEK | 1 | 1135 | n/a | n/a | n/a | 76.27 | 85.83 | 90.45 | 83.86 | 78.59 | 42.83 | 67.53 | 83.47 | 85.16 | 84.45 | 73.61 | 93.16 | 80.39 | 79.1 |
| BELEWS CREEK | 2 | 1135 | n/a | n/a | n/a | 79.29 | 62.04 | 96.16 | 92.65 | 74.50 | 99.08 | 93.00 | 89.27 | 95.15 | 69.28 | 55.38 | 92.87 | 85.98 | 83.8 |
| CLIFFSIDE | 5 | 562 | n/a | n/a | n/a | 71.39 | 91.28 | 89.63 | 81.17 | 88.03 | 81.75 | 65.63 | 43.54 | 65.04 | 56.94 | 79.51 | 86.37 | 53.83 | 73.6 |
| MARSHALL | 3 | 670 | n/a | n/a | n/a | 61.54 | 61.19 | 80.67 | 60.56 | 0.00 | 0.00 | 34.79 | 80.97 | 97.01 | 51.83 | 80.49 | 91.16 | 92.49 | 60.9 |
| MARSHALL | 4 | 670 | n/a | n/a | n/a | 64.72 | 97.53 | 91.00 | 81.43 | 44.08 | 58.02 | 92.71 | 78.11 | 99.42 | 99.25 | 70.66 | 95.54 | 91.91 | 83.3 |
| FOSSIL TOT | | 4172 | n/a | n/a | n/a | 72.21 | 78.01 | 90.41 | 81.76 | 60.59 | 58.94 | 72.99 | 78.41 | 89.36 | 73.76 | 70.08 | 92.23 | 82.13 | 77.4 |

¹The lifetime nuclear unit capacity factors are through June 2007

EXHIBIT MSH-2

**South Carolina
Office of Regulatory Staff
Fossil Unit Outage Report
(100 Hrs or Greater Duration) for
Duke Energy Carolinas, LLC**

| UNIT | DATE OFF | DATE ON | HOURS | TYPE | EXPLANATION OF OUTAGE |
|------------------|----------|----------|--------|---------|--|
| Belews Creek - 1 | 10/27/06 | 11/20/06 | 559.0 | Planned | Maintenance Outage. Upgrades were made to turbine valves as part of reliability plans. Inspections were performed on other equipment and repairs made as necessary. |
| Belews Creek - 2 | 10/01/06 | 10/07/06 | 144.0 | Forced | Boiler Tube Leak resulted in forced outage of unit. Leak was repaired and inspected without incident. |
| Belews Creek - 2 | 03/24/07 | 04/08/07 | 375.6 | Planned | Maintenance Outage. Maintenance was performed on all equipment as part of reliability plans. Inspections were performed on equipment and repairs made as necessary. |
| Cliffside - 5 | 02/24/07 | 03/12/07 | 384.0 | Planned | Maintenance Outage. Scheduled outage for maintenance centered on inspection of boilers. |
| Marshall - 3 | 09/23/06 | 12/21/06 | 2134.6 | Planned | Maintenance Outage. New Electrostatic Precipitator was tied into the unit. Maintenance and inspections were performed including significant work on the generator stator and boiler side walls. |
| Marshall - 3 | 03/03/07 | 03/18/07 | 377.7 | Planned | Maintenance Outage. Maintenance and inspections were performed on equipment and repairs made as necessary. Additional work was performed to support the future installation of enviromental equipment. |
| Marshall - 4 | 10/14/06 | 10/30/06 | 382.7 | Planned | Maintenance Outage. New FGD scrubber was tied into the unit. Maintenance and inspections were performed on other equipment and repairs made as necessary. |
| Marshall - 4 | 04/06/07 | 04/12/07 | 144.0 | Planned | Maintenance Outage. Scheduled outage for maintenance centered on inspection of boilers. |

**South Carolina
Office of Regulatory Staff
Nuclear Unit Outage Report
for Duke Energy Carolinas, LLC**

| UNIT | DATE OFF | DATE ON | HOURS | TYPE | EXPLANATION OF OUTAGE |
|-------------|------------|------------|---------|---------|---|
| Catawba - 1 | 11/11/2006 | 12/30/2006 | 1180.26 | Planned | Scheduled Refueling Outage. Outage delayed due to problem with diesel generator. |
| Catawba - 1 | 1/6/2007 | 1/6/2007 | 18.62 | Forced | High vibration on turbine bearing resulted in forced outage of unit. |
| Catawba - 1 | 3/18/2007 | 3/18/2007 | 12.10 | Forced | Closure failure in Main Turbine Valve #3 resulted in forced outage of unit. |
| McGuire - 1 | 3/10/2007 | 5/28/2007 | 1906.55 | Planned | Scheduled Refueling Outage. Outage delayed due to control rod drive binding. |
| McGuire - 2 | 9/16/2006 | 11/11/2006 | 1341.06 | Planned | Scheduled Refueling Outage. Outage delayed due to reactor building emergency sump modification. |
| Oconee - 1 | 10/7/2006 | 12/17/2006 | 1708.50 | Planned | Scheduled Refueling Outage. Outage delayed due to several modifications. |
| Oconee - 1 | 2/15/2007 | 2/23/2007 | 197.72 | Forced | Breaker failure in switchyard resulted in forced outage of unit. |
| Oconee - 2 | 9/1/2006 | 9/5/2006 | 88.17 | Forced | Methods for cooling main turbine oil failed resulting in forced outage of unit |
| Oconee - 2 | 2/15/2007 | 2/19/2007 | 90.15 | Forced | Breaker failure in switchyard resulted in forced outage of unit. |
| Oconee - 2 | 4/28/2007 | 5/30/2007 | 790.62 | Planned | Scheduled Refueling Outage. Outage was not delayed, and unit returned to service as scheduled. |
| Oconee - 3 | 8/18/2006 | 8/20/2006 | 54.08 | Forced | Problem with a control rod resulted in forced outage of unit. |

EXHIBIT MSH-4

South Carolina
Office of Regulatory Staff
Generation Mix Report (July 2006 – June 2007) for
Duke Energy Carolinas, LLC

| <u>MONTH</u> | <u>PERCENTAGE</u> | | |
|------------------|-------------------|----------------|--------------|
| | <u>FOSSIL</u> | <u>NUCLEAR</u> | <u>HYDRO</u> |
| 2006 | | | |
| July | 45.5 | 54.5 | 0.0 |
| August | 47.7 | 52.3 | 0.0 |
| September | 42.6 | 56.6 | 0.8 |
| October | 47.7 | 52.0 | 0.3 |
| November | 48.3 | 50.1 | 1.6 |
| December | 47.3 | 51.5 | 1.2 |
| 2007 | | | |
| January | 38.5 | 59.2 | 2.3 |
| February | 47.6 | 51.7 | 0.7 |
| March | 43.8 | 55.0 | 1.2 |
| April | 44.6 | 54.4 | 1.0 |
| May | 47.1 | 52.9 | 0.0 |
| June | 44.9 | 55.1 | 0.0 |
| Average | 45.5 | 53.7 | 0.8 |

South Carolina
Office of Regulatory Staff
Generation Statistics for Major Plants
(July 2006 – June 2007) for
Duke Energy Carolinas, LLC

| PLANT | TYPE FUEL | AVERAGE FUEL COST ¹ (CENTS/KWH) | GENERATION (MWH) |
|------------|-----------|---|---------------------|
| Catawba | Nuclear | 0.396 | 18,761,450 |
| Oconee | Nuclear | 0.405 | 20,030,998 |
| McGuire | Nuclear | 0.431 | 16,024,175 |
| Marshall | Coal | 2.453 | 13,741,168 |
| Cliffside | Coal | 3.046 | 4,188,693 |
| Belews Crk | Coal | 2.521 | 16,191,586 |

1 The average fuel costs for coal-fired plants include oil and/or gas cost for start-up and flame stabilization.

South Carolina
Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Energy Sales
for Duke Energy Carolinas, LLC

| | 2006 | | 2007 | | | | | | | | | | | | | | | |
|--------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|--|--|--|--|--|
| | JUL | AUG | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | TOTAL | | | | | |
| [1] ESTIMATED SALES [MWH] | 2,093,176 | 2,197,737 | 2,094,838 | 1,757,606 | 1,726,957 | 1,801,680 | 1,921,428 | 1,885,821 | 1,713,020 | 1,750,856 | 1,744,262 | 1,949,449 | 22,636,830 | | | | | |
| [2] ACTUAL SALES [MWH] | 2,038,725 | 2,169,427 | 2,017,839 | 1,647,460 | 1,671,874 | 1,705,410 | 1,795,657 | 1,894,719 | 1,614,666 | 1,727,296 | 1,647,441 | 1,879,747 | 21,810,261 | | | | | |
| [3] AMOUNT DIFFERENCE [1]-[2] | 54,451 | 28,310 | 76,999 | 110,146 | 55,083 | 96,270 | 125,771 | -8,898 | 98,354 | 23,560 | 96,821 | 69,702 | 826,569 | | | | | |
| [4] PERCENT DIFFERENCE [3]/[2] | 2.67% | 1.30% | 3.82% | 6.69% | 3.29% | 5.64% | 7.00% | -0.47% | 6.09% | 1.36% | 5.88% | 3.71% | 3.79% | | | | | |

South Carolina
Office of Regulatory Staff
SC Retail Comparison of Estimated to Actual Fuel Cost
for Duke Energy Carolinas, LLC

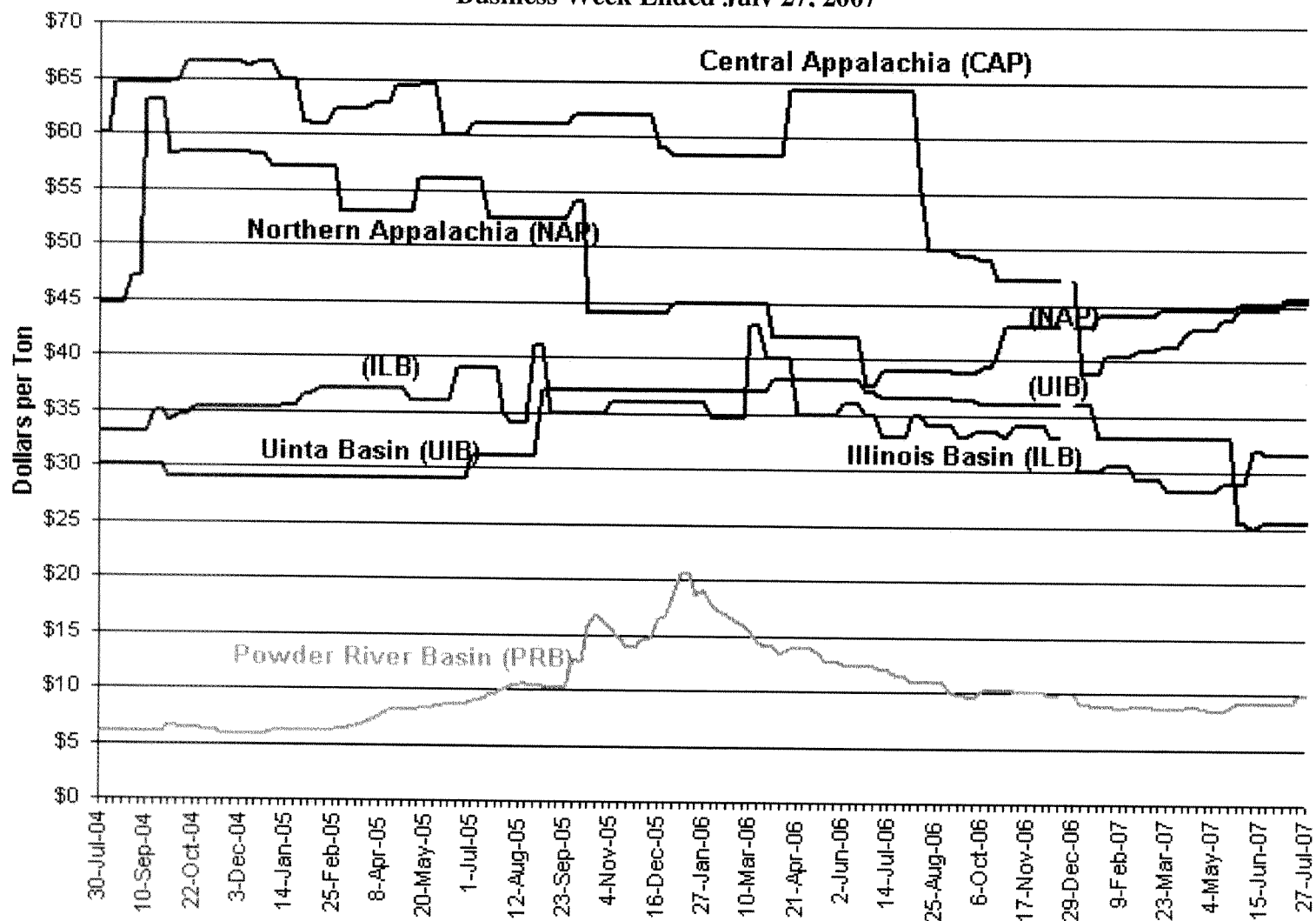
| | 2006 JUL | AUG | SEP | OCT | NOV | DEC | 2007 JAN | FEB | MAR | APR | MAY | JUN | PERIOD AVERAGE |
|--|-------------|---------|--------|--------|--------|--------|-------------|--------|--------|--------|---------|--------|-------------------|
| [1] ORIGINAL PROJECTION (¢/kWh) | 1.8970 | 1.8216 | 1.5788 | 1.8595 | 1.8498 | 1.7569 | 1.7136 | 1.5124 | 1.6483 | 1.7392 | 1.7577 | 1.8116 | 1.7458 |
| [2] ACTUAL EXPERIENCE (¢/kWh) | 1.9909 | 2.0538 | 1.4158 | 1.9240 | 2.0269 | 1.7624 | 1.4706 | 1.5303 | 1.5004 | 1.4881 | 2.0792 | 1.7862 | 1.7538 |
| [3] AMOUNT IN BASE (¢/kWh) | 1.5802 | 1.5802 | 1.5802 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | 1.7760 | |
| [4] VARIANCE FROM ACTUAL [1-2]/[2] | -4.72% | -11.31% | 11.51% | -3.35% | -8.74% | -0.31% | 16.52% | -1.17% | 9.86% | 16.87% | -15.46% | 1.42% | -0.46% |

South Carolina
Office of Regulatory Staff
History of Cumulative Recovery Account Report
for Duke Energy Carolinas, LLC

EXHIBIT MSH-9

| <u>PERIOD ENDING</u> | <u>OVER (UNDER)\$</u> |
|--|------------------------------|
| May 1979 - Automatic Fuel Adjustment in Effect | |
| November-79 | 1,398,442 |
| May-80 | 11,322,948 |
| November-80 | 4,588,331 |
| May-81 | (5,760,983) |
| November-81 | (13,061,000) |
| May-82 | (14,533,577) |
| November-82 | (4,314,612) |
| May-83 | 20,915,390 |
| November-83 | 14,192,297 |
| May-84 | 18,245,503 |
| November-84 | 14,478,363 |
| May-85 | 2,551,115 |
| November-85 | (553,465) |
| May-86 | (1,318,767) |
| November-86 | (29,609,992) |
| May-87 | (27,241,846) |
| November-87 | (29,329,168) |
| May-88 | (9,373,768) |
| November-88 | 6,544,914 |
| May-89 | 6,067,739 |
| November-89 | 11,372,399 |
| May-90 | 15,421,968 |
| November-90 | 2,939,303 |
| May-91 | 17,068,483 |
| November-91 | 21,265,000 |
| May-92 | 21,080,856 |
| November-92 | 11,553,801 |
| May-93 | 16,959,555 |
| November-93 | 221,606 |
| May-94 | 6,609,897 |
| November-94 | 1,037,659 |
| May-95 | 5,088,619 |
| November-95 | (377,507) |
| March-97 | (13,299,613) |
| March-98 | (1,956,794) |
| March-99 | 13,044,443 |
| March-00 | 26,703,441 |
| March-01 | 20,367,528 |
| March-02 | (7,446,417) |
| March-03 | (1,121,094) |
| March-04 | 11,424,295 |
| June-05 | (2,669,646) |
| June-06 | 6,984,672 |
| June-07 | 1,632,482 |

**EIA Average Weekly Coal Commodity Spot Prices
Business Week Ended July 27, 2007**



Key to Coal Commodities by Region¹

Central Appalachia: Big Sandy/Kanawha 12,500 Btu, 1.2 lb SO₂/mmBtu
Northern Appalachia: Pittsburgh Seam 13,000 Btu, <3.0 lb SO₂/mmBtu
Illinois Basin: 11,800 Btu, 5.0 lb SO₂/mmBtu

Powder River Basin: 8,800 Btu, 0.8 lb SO₂/mmBtu
Uinta Basin in Colo.: 11,700 Btu, 0.8 lb SO₂/mmBtu

EIA Weighted-Average Price of U.S. and Foreign-Origin Uranium Purchased by Owners and Operators of U.S. Civilian Nuclear Power Reactors, 1994-2006 Deliveries

